

K. ISHIHARA, M. NAGAMACHI, S. ISHIHARA. **A cognitive training game for elderly people.** *Gerontechnology* 2012;11(2):173; doi:10.4017/gt.2012.11.02.663.00 **Purpose** The aim was to develop a “whack-a-mole” type electromechanical game for older players to maintain cognitive ability. The game is intended to incorporate tests on reaction time, short-term memory, shift of visual attention and action control. Because our players were not familiar with electronic games, we set up constraints and requirements as part of the game so that they were able to play the game, and were also willing to play repeatedly. **Method** The authors produced a game machine prototype and visited monthly meeting held at the local public hall to propose the game to men and women between 55 and 90 years old at the meeting¹. The authors visited eight times between October 2009 and December 2010 with the improved game machine adapted to the players’ physical restrictions and mental preferences. Between 9 and 27 people voluntarily tried the game at each visit. In total, 52 people played the game over the eight visits². **Results & Discussion** The authors found the game design requirements for elderly people in the improvement history. The following constraints and requirement were found to be important. (i) Play constraints: Because many elderly people have narrower visual field than younger people and motor control tends to become less precise with age, we used a small reaction area with push-button switches that were sensitive enough for light tapping, durable enough for strong hits, and large enough for slight misses. The push buttons were arranged far apart to prevent mistaken hits. (ii) Requirements to ensure that players will want to try the game: our players responded that they like to gather and to enjoy competing with one another or themselves. Therefore, the game has speakers and a large display and that shows scores to others who watched and were not playing for competition. (iii) Requirements so players believed they could succeed: it was important, particularly for those with poorer abilities, that the game be at a level that makes them believe that they can complete the game. Our game has a very easy task level and a mode with no reaction-time limit so that any player can complete the game. The sound and visual displays of our game can be turned off, so that the players can play the game without fearing scrutiny. (iv) Requirements to encourage players to want to try again: our game offers more advanced and challenging levels than those suited to the player’s current ability. Based on the results of our trials, we conclude that most of the players were satisfied with the game. Half of the participants played more than twice. Two played the game at every visit. Many elderly people played the game repeatedly.

References

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Figure 1. Elderly people played our game ‘Ikiiki-pom’ and its variations. The researchers facilitated the playing